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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,762	12/12/2003	Kazuo Yamada	900-485	8722

23117 7590 12/18/2006  
NIXON & VANDERHYE, PC  
901 NORTH GLEBE ROAD, 11TH FLOOR  
ARLINGTON, VA 22203

EXAMINER
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RUTHKOSKY, MARK

ART UNIT	PAPER NUMBER
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1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/18/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/733,762

Applicant(s)

YAMADA ET AL.

Examiner

Mark Ruthkosky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/12/2003</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

The information disclosure statement filed 12/12/2003 has been placed in the application file, and the information referred to therein has been considered as to the merits.

### ***Drawings***

The drawings filed on 12/12/2003 have been approved.

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-4, drawn to a polymer battery, classified in class 429, subclass 303.
- II. Claims 5-6, drawn to a method of manufacturing a polymer battery, classified in class 29, subclass 623.1.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be

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made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by another and materially different process such as laminating the electrodes on an electrolyte substrate using a masking template.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art due to their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

In a telephone message left by with Mr, Warren Burnam, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-4. Affirmation of this election must be made by applicant in replying to this Office action. Claims 5-6 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

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application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 recites the limitation "the two sides of the positive electrode" in line 24. There is insufficient antecedent basis for this limitation in the claim. The electrode is not described in the claims as having two sides or sides, in general.

### ***Claim Objections***

Claims 1-4 are objected to because of the following informalities: The claims include the symbol > to denote "greater than." In the claims it would be appropriate to substitute the phrase "greater than" for the symbol > in order to clearly describe the limitation of the claim to those who do not recognize the symbol. This change would not influence the scope of the claims, as the terms are equivalent. Further, the numbers and letters denoting figure elements such as (4), (D1), and (D2) should be removed from the claims because they refer to specific embodiments of the figures. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Gauthier et al.

(US 5,415,954.)

The instant claims are to a polymer battery having at least one layer of a positive electrode, at least one layer of a polymer electrolyte retained by a separator and at least one layer of a negative electrode, each of which is in a thin film form, stacked in this order, wherein the entirety of the outer peripheries of the separator and of the negative electrode is positioned outside of the outer periphery of the positive electrode except for a collector tab (4) provided to the positive electrode so as to protrude from one side of the positive electrode, and the following relationship is satisfied in a portion of the outer peripheries of the separator and of the negative electrode: the length between the end of the negative electrode and the end of the positive electrode > the length between the end of the negative electrode and the end of the separator.

Gauthier et al. (US 5,415,954) teaches a polymer battery having at least one layer of a positive electrode, at least one layer of a polymer electrolyte retained by a separator and at least

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one layer of a negative electrode, each of which is in a thin film form, stacked in this order (see figure 4 and col. 10.) The electrodes are taught to be in a rectangular, strip shape (see the figures, col. 9, line 20 to col. 10, line 60.) The polymer electrolyte separates the positive electrode from the negative electrode. The entirety of the outer peripheries of the separator and of the negative electrode is positioned outside of the outer periphery of the positive electrode except for a collector tab provided to the positive electrode so as to protrude from one side of the positive electrode (see the figures, the corresponding text and specifically figure 4.) The following relationship is satisfied in a portion of the outer peripheries of the separator and of the negative electrode: the length between the end of the negative electrode and the end of the positive electrode (D1) > the length between the end of the negative electrode and the end of the separator (D2) (see figure 4B, for example.) Thus, the claims are anticipated.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gauthier et al. (US 5,415,954), in view of Rouillard et al. (US 6,120,930.)

The teachings of Gauthier et al. (US 5,415,954) have been presented. The reference does not teach a polymer battery wherein the length between the end of the negative electrode and the end of the separator is set at a value which is 20% or less of the length between the end of the

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negative electrode and the end of positive electrode. It would have been obvious to one of ordinary skill in the art at the time the invention was made to set the length between the end of the negative electrode and the end of the separator at a value which is 20% or less of the length between the end of the negative electrode and the end of positive electrode in order to prevent short-circuiting by contact between the negative electrode and the end of positive electrode. One of ordinary skill in the art would have recognized at the time of the invention that adding more separator/electrolyte between the ends of the opposite electrodes will help prevent contact between the negative electrode and the positive electrode in the event of the jarring the cell, or other like instances, wherein the electrodes are shifted out of alignment.

Further the reference does not teach a polymer battery wherein the two sides of the positive electrode are provided with polymer electrolytes, respectively, retained by separators, and at least portions of the separators are linked to each other. Rouillard et al. (US 6,120,930) teaches a polymer battery having at least one layer of a positive electrode, at least one layer of a polymer electrolyte retained by a separator and at least one layer of a negative electrode, each of which is in a thin film form, stacked in this order (see figure 1 and cols. 3-4.) The following relationship is satisfied in a portion of the outer peripheries of the separator and of the negative electrode: the length between the end of the negative electrode and the end of the positive electrode ( $D1$ ) > the length between the end of the negative electrode and the end of the separator ( $D2$ ). The reference teaches a polymer battery wherein the two sides of the positive electrode are provided with polymer electrolytes, respectively, retained by separators. The reference does not teach portions of the separators linked to each other. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the



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positive electrodes of Gauthier et al. (US 5,415,954) in a configuration wherein two sides of the positive electrode are provided with polymer electrolytes, as taught by Rouillard et al. (US 6,120,930 as this configuration allows for both electrodes to transfer electrons from a shared current collector as noted in figure 1 of Rouillard. Sharing a current collector between two adjacent cells will allow for fewer collectors and a lower battery weight. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to insulate the end edges of the current collectors from contact with negative electrodes, which will short-circuit the battery. One of ordinary skill in the art would have recognized at the time of the invention that adding more separator/electrolyte between the ends of the opposite electrodes will help prevent contact between the negative electrode and the positive electrode in the event of the jarring the cell, or other like instances, wherein the electrodes are shifted out of alignment.

The artisan would have found the claimed invention to be obvious in light of the teachings of the references.

#### ***Examiner Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:30.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

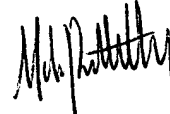
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Mark Ruthkosky

Primary Patent Examiner

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A handwritten signature in black ink, appearing to read 'Mark Ruthkosky', written in a cursive style.

12.11.06